

## UNDESCRIBED OR LITTLE-KNOWN CRANE-FLIES FROM THE PACIFIC ISLANDS (TIPULIDÆ, DIPTERA).

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Through the kindness of Prof. R. W. Doane and Mr. F. R. Cole, the writer was able to examine the crane-flies collected by Prof. Doane in Tahiti in 1908, in Samoa in 1913, and by Prof. V. L. Kellogg in the latter island in 1902. The result of this study has considerably extended our rather scanty knowledge of the Tipulidæ of oceanic islands although the main features of distribution are unmodified. The writer wishes to thank Prof. Doane and Mr. Cole for the privilege of studying this material. The types have been returned to Prof. Doane.

### ***Libnotes perkinsi* (Grimshaw).**

Tahiti, August, 1908 (R. W. Doane); ♂.

Samoa, Apia, June-July 1913 (R. W. Doane); one small ♂.

This beautiful crane-fly was hitherto known only from Hawaii.

### ***Libnotes samoensis* sp. n.**

General coloration shiny reddish brown; head silvery white with a dark brown vertical mark; femora pale brown with a broad, dark brown subterminal ring; wings subhyaline, the stigma dark brown; in the male cell 1st  $R_1$  suffused with brown;  $R_s$  short, straight; cell 1st  $M_2$  closed.

*Male*.—Length 7.5 mm.; wing, 9.8 mm.

*Female*.—Length 6.8 mm.; wing, 8 mm.

Rostrum and palpi dark brown. Antennæ with the scapal segments pale brown, the flagellum dark brown; flagellar segments elongate-cylindrical. Head with a pale silvery pubescence, clearest on the anterior part of the vertex; vertex with a conspicuous dark brown median mark, the sides less conspicuously darkened.

Mesonotum shiny reddish brown, the lateral præscutal stripes rather distinct, continued across the suture and suffusing the scutal lobes; scutellum and median area of the scutum pale; postnotum brown, paler basally. Pleura dull yellow, darker dorsally. Halteres brown, the base of the stem paler. Legs with the coxæ pale brownish yellow; trochanters dull yellow; femora pale brown with a broad, dark brown ring before the slightly narrower yellowish tip; tibiae

and tarsi brown, the apical segments of the latter darker. Wings subhyaline, the veins suffused with pale brown, darkest at the stigma where it occurs as a semicircular mark; a dark cloud beyond  $R_s$  in cells  $Sc$  and  $1st\ R_1$ ; veins dark brown,  $C$  and  $Sc$  more yellowish. Venation:  $Sc$  ending just before the fork of the short, slightly convex sector,  $Sc_2$  at the tip of  $Sc_1$ ;  $R_s$  about twice the deflection of  $R_{4+5}$ ;  $R_1$  with a long spur beyond  $r$  and the tip of  $R_1$ ;  $r-m$  a little shorter than the basal deflection of  $R_{4+5}$ ; veins  $R_{2+3}$  and  $R_{4+5}$  deflected strongly caudad at about two thirds their length and running generally parallel to one another; basal deflection of  $Cu_1$  near midlength of the rectangular cell  $1st\ M_2$ . In the female the only distinct marking on the wing is the conspicuous, rounded, brown stigma; the spur at the end of  $R_1$  is shorter and  $m$  is more arcuated.

Abdominal tergites obscure brownish, the basal sternites bright yellow. In the female the tergites are dark brown, possibly discolored. Ovipositor with the valves rather short, the tergal valves slightly upcurved.

*Habitat*.—Samoa.

*Holotype*, ♂, Apia, June, July, 1913 (R. W. Doane); *Allotopotype*, ♀.

It now seems very probable that the fly described as *Teucholabis fijiensis* Alexander (Ann. Ent. Soc. America, Vol. 7, p. 240; 1914) is not a true *Teucholabis* and is possibly more nearly related to *Libnotes*.

### ***Rhipidia tusitala* sp. n.**

General coloration pale yellow; head grey; antennal segments produced into flattened disks whose margins are provided with stout spinous bristles; wings pale yellow, veins  $C$  and  $R$  incrassated;  $Sc$  short, cell  $R_1$  very large and oval due to the strong bending of vein  $R_{2+3}$  toward  $R_{4+5}$  near its base.

*Male*.—Length about 5.6 mm.; wing, 7.5 mm.

Rostrum and palpi dark brown. Antennæ pale brownish yellow, 14-segmented, the basal segment elongate-cylindrical; ultimate segment formed by the evident fusion of two smaller segments; intermediate flagellar segments with the inner face strongly produced into a serration; around the periphery of these disk-like segments are a series of about six stout, spinous bristles of which three are grouped near the tip of the serration; surface of the flagellar segments microscopically alutaceous. Head light gray.

Mesonotum light yellow, the postnotum more whitish. Pleura pale whitish yellow. Halteres pale. Legs pale yellow.

low, the distal tarsal segments brown; claws toothed. Wings pale yellowish subhyaline; veins yellow. Venation: Costa and radius before the sector considerably incrassated, with numerous stout macrotrichiae; *Sc* rather short, ending a distance before the origin of *Rs* that is about equal to *Rs* and the basal deflection of  $R_{4+5}$  combined; tip of  $R_1$  atrophied, indicated only by a spur on costa, the macrotrichiae of  $R_1$  continued onto *r* for most of its length; *Rs* short, almost straight, about one half longer than the basal deflection of  $R_{4+5}$ ; *r* long, arcuated, inserted on  $R_{2+3}$  about its own length before the tip; cell  $R_1$  is very much enlarged, elongate-oval in outline; vein  $R_{2+3}$  is bent strongly toward  $R_{4+5}$  beyond its origin; *r-m* very short; cell 1st  $M_2$  closed, about as long as vein  $M_{1+2}$  beyond it; basal deflection of  $Cu_1$  just beyond the fork of *M*; anal angle rather prominent. Veins *M*, *Cu*, 1st *A* and 2nd *A* proximad of the cord destitute of macrotrichiae or nearly so.

Abdomen pale yellow, the caudal margins of the segments narrowly brown. Male hypopygium with the two appendages nearly as long as the pleurites, the ventral pleural appendage fleshy, cylindrical, the tip produced slightly cephalad or proximad; dorsal pleural appendage curved slightly near the tip.

*Habitat*.—Samoa.

*Holotype*, ♂, Apia, June–July, 1913 (R. W. Doane).

This curious fly is not a typical member of the genus *Rhipidia* but from the unique structure of the antennae it is placed in this group, at least provisionally. It is named in honor of the memory of Robert Louis Stevenson, "Tusitala," who spent the last few years of his life in Samoa and is buried near the type-locality. *R. debeauforti* (Meijere) is another member of this group.

### **Doaneomyia** gen. n.

Related to *Dicranomyia* but distinguished from this genus as well as all others in the family Tipulidae by the presence of a single anal vein. Antennae 14-segmented. Tibiae without spurs; claws long, simple, almost straight. Vein *Sc* is short, with  $Sc_2$  not far removed from the tip of  $Sc_1$ ; *Rs* and the basal deflection of  $R_{4+5}$  in alignment and subequal; cell 1st  $M_2$  open by the atrophy of the outer deflection of  $M_3$ ; only the 1st Anal vein preserved; no vestige of the atrophied vein immediately behind vein *Cu*; a long basal wing-petiole.

Genotype.—*Doaneomyia tahitiensis* sp. n. (Australasian Region).

***Doaneomyia tahitiensis* sp. n.**

General coloration reddish brown; antennæ dark brown; legs brown, the tibiæ and tarsi variegated with pure white; wings subhyaline; stigma small, dark brown, cell 1st  $M_2$  open; a single anal vein.

*Male*.—Wing, 6–6.4 mm.

Rostrum pale brown; palpi dark brown. Antennæ dark brown; flagellar segments long-oval, densely white pubescent, verticils moderately elongated. Head dark brown.

Mesonotum reddish brown, darker medially, brighter laterally. Pleura pale reddish yellow. Halteres dark brown. Legs with the coxæ and trochanters yellow; femora pale brown; tibiæ dark brown, the moderately narrow base and the broad (about twice the base) apex pure snowy white; tarsi pure white, the basal two fifths of the metatarsus beyond the extreme base infuscated. Wings subhyaline; stigma small, oval, dark brown; veins dark brownish black. Venation:  $Sc$  rather short,  $Sc_1$  ending a short distance before the origin of  $Rs$ ,  $Sc_1$  about three times the length of  $Sc_2$ ;  $Rs$  but little longer than the basal deflection of  $R_{4+5}$ ;  $r$  and the tip of  $R_1$  indistinct; cell 1st  $M_2$  open by the atrophy of  $M_3$ ; cell 2nd  $M_2$  about one-half longer than its petiole; basal deflection of  $Cu_1$  just before the fork of  $M$ ; basal deflection of  $Cu_1$  equal to or a little longer than  $Cu_2$ ; a single anal vein; the atrophied vein that lies behind  $Cu$  in many Tipulidæ is here entirely lacking.

Abdomen dark brown, the incisures paler. Male hypopygium with the dorsal appendage strongly curved; gonapophyses appearing as flattened plates.

*Habitat*.—Tahiti.

*Holotype*, ♂, August, 1908 (R. W. Doane). *Paratopotype*, Sex?.

The paratype is merely a fragment but unquestionably belongs to this species. It is with great pleasure that this curious genus is dedicated to Prof. Doane.

***Trentepohlia (Mongoma) samoensis* sp. n.**

General coloration dark brown; legs brown, the tips of the femora and tibiæ narrowly white; tarsi pale brown; wings dusky grey.

*Male*.—Length 7.5–8 mm.; wing, 7.5–9 mm. *Female*.—Length about 9 mm.; wing, 8.5 mm.

Mouthparts yellowish; palpi dark brown. Antennæ dark brown. Head dark brown.

Mesonotum shiny dark brown, only the median area of the scutum, and the scutellum paler. Pleura pale brown. Halteres dark brown, the base of the stem paler. Legs with the coxæ and trochanters pale brown; femora pale brown, the tips narrowly (1 mm.) creamy-white; tibiæ brown, the extreme bases creamy, the tips passing into whitish (1.5–1.7 mm.); tarsi pale brown throughout; fore femora with a series of about five long bristles near the base. Wings with a strong dusky grey tinge, the costal and subcostal cells more brownish; stigma elongate oval, dark brown; wing-tip slightly infuscated; veins dark brown. Venation:  $Sc_2$  not far from the tip of  $Sc_1$ , the distance between  $Sc_2$  and  $r$  being a little less than the tip of  $R_1$  beyond  $r$ ;  $2nd\ A$  almost straight beyond the base.

Abdomen dark brown, the sternites and hypopygium a little paler.

*Habitat*.—Samoa.

*Holotype*, ♂, Apia, June–July, 1913 (R. W. Doane); *Allotopotype*, ♀; *Paratopotypes*, 10 ♂'s (R. W. Doane); 1 ♂, July, 1902 (V. L. Kellogg).

***Trentepohlia (Mongoma) pacifica* sp. n.**

*Female*.—Length about 6.8 mm.; wing, 6.2 mm.; fore leg, femur, 9.4 mm.; tibia, 9.5 mm.

Similar to *T. (M.) samoensis* but much smaller; mesonotum light reddish yellow; legs pale brown, the tips of the femora rather broadly (1.5 mm.) pure white; tibiæ brown, the extreme base and the broad tips (2 mm.) white; tarsi pure white, only the distal segments brownish; wings nearly hyaline, including the costal cell; stigma pale brown:  $Sc_2$  much closer to the tip of  $Sc_1$ ; basal deflection of  $Cu_1$  a short distance before the fork of  $M$ .

*Habitat*.—Samoa.

*Holotype*, ♀, Apia, June–July, 1913 (R. W. Doane); *Paratopotype*, ♀.

***Styringomyia didyma* Grimshaw.**

Tahiti, August, 1908 (R. W. Doane); a few ♂ ♀.